Claim Listing   This listing of claims will replace all prior versions and listings of

claims in the application:

1 – 52:   (cancelled)

53.   (currently amended) An expression vector, which vector

is optimized for use in prokaryotic cells, for enhancing

the solubility and proper folding of an expressed protein

or polypeptide of interest said protein or polypeptide

having an amino-terminus and a carboxyl-terminus,

comprising a first nucleic acid sequence encoding a peptide

extension, ~~of 61 or fewer amino acid residues, the encoded~~

~~peptide extension having a net negative charge ranging from~~

~~-2 to -20 under physiological conditions~~ which peptide

10 extension comprises the carboxyl-terminal 57 amino acid

residues of a T7 gene 10B protein; the expression vector

further comprising a multiple cloning site for inserting,

in-frame with said first nucleic acid sequence, a second

nucleic acid sequence encoding the protein or polypeptide

of interest, wherein expression of the nucleic acid

sequences under physiological conditions yields a fusion

protein consisting essentially of the encoded peptide

extension fused to the carboxyl-terminus of the protein or

polypeptide of interest.

54. - 62.   (cancelled)

63.   (currently amended) The expression vector of Claim ~~62~~

53 wherein one or more of the amino acid residues <u>of the</u>

<u>encoded peptide extension</u> are substituted, which

substitutions result in the maintenance of a net negative

charge between -2 and -20 for the encoded peptide

extension.

64.   (currently amended) The expression vector of Claim

~~62~~<u>53</u>, wherein the encoded peptide extension is selected

from the group consisting of: Peptide T7C (SEQ ID NO: 5),

Peptide T7B (SEQ ID NO: 6), Peptide T7B1 (SEQ ID NO: 7),

Peptide T7B2 (SEQ ID NO: 8), Peptide T7B3 (SEQ ID NO: 9),

Peptide T7B5 (SEQ ID NO: 11), Peptide T7B6 (SEQ ID NO: 12),

Peptide T7B7 (SEQ ID NO: 13), Peptide T7B8 (SEQ ID NO: 14),

Peptide T7B9 (SEQ ID NO: 15), Peptide T7B10 (SEQ ID NO:

16), Peptide T7B11 (SEQ ID NO: 17), Peptide T7B12 (SEQ ID

NO: 18), Peptide T7B13 (SEQ ID NO: 19), Peptide T7A1 (SEQ

ID NO: 21), Peptide T7A2 (SEQ ID NO: 22), Peptide T7A3 (SEQ

ID NO: 23), Peptide T7A4 (SEQ ID NO: 24) and Peptide T7A5

(SEQ ID NO: 25).

65 - 86   (cancelled)

87.   (currently amended) The expression vector of Claim 62

53 wherein the encoded peptide extension comprises the

carboxyl-terminal 40 amino acid residues of the T7 gene 10B

protein.

88.   (currently amended) The expression vector of Claim 87

wherein one or more of the amino acid residues are

substituted or deleted, which substitutions or deletions

result in the maintenance of a net negative charge between

-2 and -20 for the encoded peptide extension.

89.   (currently amended) The expression vector orof Claim

8788 wherein the encoded peptide extension comprises the

carboxyl-terminal 18 amino acid residues of the T7 gene 10B

protein and wherein one or more of the amino acids are

substituted, which said substitutions or deletions result

in the maintenance of a net negative charge between -4 and

-6 for the encoded peptide extension.

90. (currently amended) An expression vector for enhancing

the solubility and proper folding of an expressed protein

or polypeptide of interest, which vector is optimized for

use in bacterial cells, said protein or polypeptide having

an amino-terminus and a carboxyl-terminus, comprising a

first nucleic acid sequence encoding a 61 or fewer amino

acid peptide extension comprising the carboxyl-terminal 57

amino acid residues of a bacteriophage T7 gene 10B protein,

and further comprising a multiple cloning site for

10   inserting, in-frame with said first nucleic acid sequence,

a second nucleic acid sequence encoding the protein or

polypeptide of interest, wherein expression of the nucleic

acid sequences under physiological conditions yields a

fusion protein consisting essentially of the encoded

peptide extension fused to the carboxyl-terminus of the

protein or polypeptide of interest.

91. (currently amended) The expression vector of Claim 90

wherein one or more of the amino acid residues are

substituted or deleted, which substitutions or deletions

result in a net negative charge between -2 and -20 under

physiological conditions for the encoded peptide.

92.   (previously presented)   The expression vector of

Claim 90 wherein the encoded peptide is selected from the

group consisting of: Peptide T7C (SEQ ID NO: 5), Peptide

T7B (SEQ ID NO: 6), Peptide T7B1 (SEQ ID NO: 7), Peptide

T7B2 (SEQ ID NO: 8), Peptide T7B3 (SEQ ID NO: 9), Peptide

T7B5 (SEQ ID NO: 11), Peptide T7B6 (SEQ ID NO: 12), Peptide

T7B7 (SEQ ID NO: 13), Peptide T7B8 (SEQ ID NO: 14), Peptide

T7B9 (SEQ ID NO: 15), Peptide T7B10 (SEQ ID NO: 16),

Peptide T7B11 (SEQ ID NO: 17), Peptide T7B12 (SEQ ID NO:

10   18), Peptide T7B13 (SEQ ID NO: 19), Peptide T7A1 (SEQ ID

NO: 21), Peptide T7A2 (SEQ ID NO: 22), Peptide T7A3 (SEQ ID

NO: 23), Peptide T7A4 (SEQ ID NO: 24) and Peptide T7A5 (SEQ

ID NO: 25).

93.   (currently amended) An expression vector, optimized

for use in bacterial cells, for enhancing the solubility

and proper folding of an expressed protein or polypeptide

of interest, said protein or polypeptide having an amino-

terminus and a carboxyl-terminus, comprising a first

nucleic acid sequence encoding a peptide extension, which

peptide extension is selected from the group consisting of:

Peptide T7C (SEQ ID NO: 5), Peptide T7B (SEQ ID NO: 6),

Peptide T7B1 (SEQ ID NO: 7), Peptide T7B2 (SEQ ID NO: 8),

10   Peptide T7B3 (SEQ ID NO: 9), Peptide T7B5 (SEQ ID NO: 11),

Peptide T7B6 (SEQ ID NO: 12), Peptide T7B7 (SEQ ID NO: 13),

Peptide T7B8 (SEQ ID NO: 14), Peptide T7B9 (SEQ ID NO: 15),

Peptide T7B10 (SEQ ID NO: 16), Peptide T7B11 (SEQ ID NO:

17), Peptide T7B12 (SEQ ID NO: 18), Peptide T7B13 (SEQ ID

NO: 19), Peptide T7A1 (SEQ ID NO: 21), Peptide T7A2 (SEQ ID

NO: 22), Peptide T7A3 (SEQ ID NO: 23), Peptide T7A4 (SEQ ID

NO: 24) and Peptide T7A5 (SEQ ID NO: 25), and further

comprising a multiple cloning site for inserting, in-frame

with said first nucleic acid sequence, a second nucleic

20   acid sequence encoding the protein or polypeptide of

interest, wherein expression of the nucleic acid sequences

under physiological conditions yields a fusion protein

consisting essentially of the encoded peptide extension

fused to the carboxyl-terminus of the protein or

polypeptide of interest.

94.   (new)   The prokaryotic cell expression vector of

claim 53 wherein the cell is E. coli.

95.   (new)   The expression vector of Claim 90 wherein

the bacterial cell is selected from the group consisting of

E. coli, B. subtilis, and R. eutrophus.

96. (new)   The expression vector of Claim 95 wherein

the cell is E. coli.

97. (new)   The expression vector of Claim 93 wherein

the bacterial cell is selected from the group consisting of

E. coli, B. subtilis, and R. eutrophus.

98. (new)   The expression vector of Claim 97 wherein

the cell in E. coli.